

Energy *and* Waste Update

FY2015

Sustainability timeline 1990-2014

1990

Traffic division begins converting city traffic signals to LED lighting, reaching full conversion in 2005.

1994

City recycling begins single-stream collection.

1995

Solid Waste division begins collecting recyclable material from city offices and facilities.

1997

Solid Waste division begins collecting electronics from city offices to recycle and divert from the landfill.

2005

(revised 2011) Fuel Conservation, Executive Directive #2005-004 City leadership established department-specific fuel efficiency strategies compiled into a fuel conservation directive.

2008

City begins internal operations' outreach and educational effort centered on energy conservation.

2006

Mayor Saffo signed the US Mayors Climate Protection Agreement.



2009

The city builds a new streetsweeper complex designed for net zero energy performance.

2009

Solid Waste and recycling conducts a route optimization project, realizing greater staff and time efficiencies.

2010

Streets division recycling efforts include reusing and recycling asphalt millings as well as historic brick, cobblestone and granite reuse.

2010

The city was awarded the Local Energy Assurance Planning grant (LEAP). The grant funded a Sustainability Manager position to develop an energy assurance report aligned with the State Energy Office energy assurance initiative.



2012

City Council authorizes installation of Electrical Vehicle Supply Equipment at the Market Street parking deck in collaboration with Progress Energy (now Duke Energy Progress).

2012

LED streetlighting and signals were installed as a part of the North Third Street Improvement project.

2011

Alternative Work Schedule Policy (240) approved with slight emphasis on work space sharing.

2012

The Police Department begin using a solar powered boat lift.

2012

Public Services department hired Sustainability Project Manager to act as energy manager.

2013

The City's first Sustainability Committee was formed in an effort to develop formal educational outreach opportunities for city staff, review and recommend policies and share sustainability knowledge.

2014

Public Services begins using Utility Manager Pro software to track and benchmark city electricity, natural gas and water consumption.

2014

Facilities began replacing aging warehouse light fixtures with light emitting diode (LED) fixtures resulting in energy savings return on investments.

2014

Leased streetlights and area lighting have started being converting to light emitting diodes (LED) per Duke Energy Progress' monthly lighting rates.

2014

A 9.6 kw solar array was donated to the City of Wilmington. It is located at the Brax Stadium Miracle Field at Olsen Park.



1990-97

2002-10

1990

The City of Wilmington begins a voluntary curbside recycling program for city trash residents.

2002

IT Department committed to purchasing Energy Star Computers.



2005

Stormwater division installed a solar aerator in Greenfield Lake as part of the lake management plan.

2007

Traffic division initiated a LED streetlighting pilot project.



2009

City Council adopted a Resolution establishing a goal for reducing greenhouse gas emissions from internal operations by 58% by 2050 in keeping with the principles of the US Conference of Mayors' Climate Protection Initiative.

2009

The city was awarded the Energy Efficiency Community Block Grant (EECBG), allowing the city to install energy efficiency upgrades to several facilities.

2010

Fleet began evaluating vehicle needs and purchasing smaller, more fuel efficient vehicles.



2010

Fleet management develops a no-idling policy and began using Ultra Low Sulfur Diesel for fueling the diesel fleet. The gasoline fleet uses E10 fuel.

2010

Wilmington Convention Center built to LEED Silver standards.



2011-2015

2011

Solid Waste division begins recycling used and/or broken trash and recycling carts, diverting them from the landfill.

2012

Carpooling opportunities are offered to city employees in conjunction with other Transit Demand Management programs in N.C.

2012-13

Solid Waste division rolled out the Big Blue recycling program, converting the voluntary recycling collection program from an 18-gallon bin to a 95-gallon rolling cart, while transitioning to a bi-weekly collection schedule.



2013

Solid Waste division initiated the city's first internal Waste Audit to understand employee recycling behavior.

2013

Recycling education and outreach program launched, including outreach to internal stakeholders.



2013-14

Solid Waste division was awarded the Community Waste Reduction and Recycling grant to expand recycling in parks and public spaces.

2014-15

Solid Waste division was awarded the Community Waste Reduction and Recycling grant to expand recycling on Front and Third streets.

2014-15

The City's first Sustainability Management Plan was developed, goals and metrics were identified and educational strategies around *Waste Reduction and Recycling* were chosen as the FY 2014-2015 focus area (See Appendix A).

Sustainability Committee

The Sustainability Committee works to ensure an environmentally responsible, resilient and quality organization by raising awareness around sustainability best practice, committing to conserving resources and reducing the organizational carbon footprint.



Sustainability Committee

- Monthly meetings
- Quarterly newsletter
- Sustainability Management Plan
 - Focus Areas
 - Strategies

Sustainability Committee

Quarterly Newsletter
Spring 2015



Park and Ride lot locations

The region's first Park and Ride lots are located in Leland.

- Brunswick Forest in front of Lowe's grocery store
- Food Lion on Mt. Misery Road near Hwy 74/76

The park and ride lots have designated parking spots for carpools, vanpools, or those riding the Wave Transit Brunswick Connector route. Meeting a co-worker to carpool or meeting a vanpool? Want to try public transportation? Leave a car here during working hours.

Bike to Work Week

Participate in Bike to Work week May 10th-16th as a city employee! Last year, the region biked an approximate 3,803 miles, burned 190,150 calories and lost a whopping 54 pounds! Employees from 45 area employers participated in the event. UNCW, New Hanover County and the City had the most participants, respectively. We'd love for you to join city bicyclists if you are able and willing! Please register at www.surveymonkey.com/r/BikeRegistration



Stuck in traffic?

Are you ever stuck in traffic and wonder what can be done to relieve congestion? How can this region mitigate traffic while still maintaining financial sustainability? Transportation Demand Management (TDM) is one way the regional planning group, Wilmington Metropolitan Planning Organization, is managing the tremendous growth our region is experiencing. Would you like to drive less, carpool or vanpool, or ride a bike more often, instead of driving? There are a few options you may want to consider:

- Try out Leland's Park and Ride lots. Each lot has a bus stop along Wave Transit's Brunswick Connector route and parking spaces specifically reserved for people who carpool, vanpool, or use public transportation
- Carpool with a co-worker or friend, or find a match with Share the Ride NC. Learn more at sharetheridenc.org
- Join us for the River to Sea Bike Ride on Saturday May 2nd. Registration starts at 8am in the 100 block of N. Front Street. For more information visit www.river-to-seabikeride.com

For more details, contact Adrienne Harrington, Transportation Planner adrienne.harrington@wilmingtonnc.gov

The City of Wilmington has more than **900** employees and is one of the **largest** employers in the region. Survey showed over **80%** in the region use a private vehicle for most trips

55% would prefer to bike more often

35% prefer to drive a vehicle less

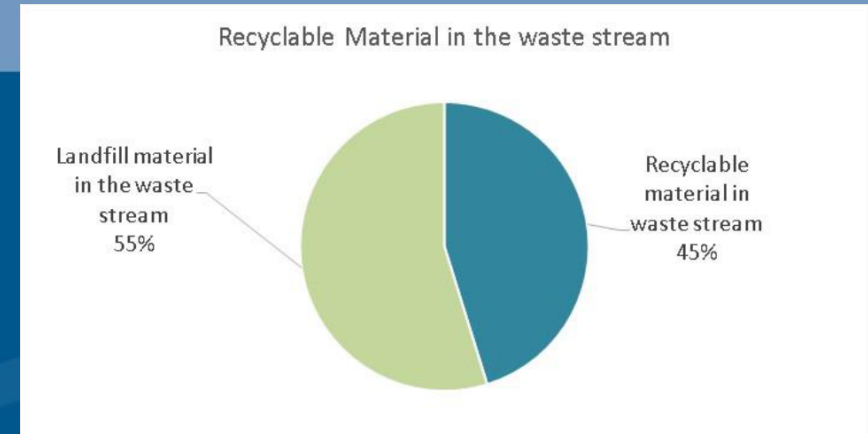
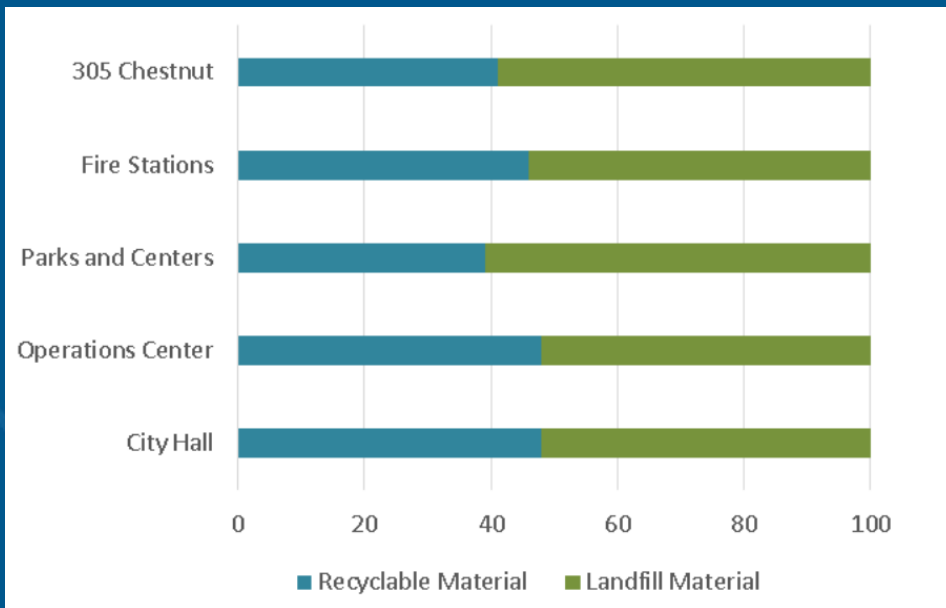
(Source: Cape Fear Transportation 2040 public survey)

Sustainability Management Plan

- Focus area FY2014-2015 – Waste Reduction and Recycling
- Strategies
 - Office recycling bin inventory
 - Water bottle filling stations
 - Information on double-sided printing
 - Recycling education meetings
 - Waste Audit



Waste Audit 2015



Recycling and Waste Reduction

- Community Waste Reduction and Recycling Grants
 - FY2013-2014 Parks and Public Spaces
 - FY2014-2015 Downtown pedestrian areas
- MRF Lesson Partnership
 - City, County, UNCW Watson College of Education, Keep New Hanover County Beautiful, UNCW Center for Science, Technology, Engineering and Mathematics (STEM)
 - 4th grade lesson
 - Kits available at UNCW Curriculum Materials Center



Electricity Consumption

- Tracking electricity and water consumption monthly
- Indoor LED fixture replacements at Operations Center warehouses
- LED streetlight and area light conversions through Duke Energy Progress
- Energy audits through Waste Reduction Partners
- Miracle Field Solar array



Electricity Consumption

Indoor LED replacements

- Operations Center warehouse fixtures
 - Storm water
 - Facilities
 - Police
 - Fleet maintenance
- Estimated annual savings \$3,772
- Average payback 5 years
- 10-year warranty
- Work stations brighter, lights more responsive



Electricity Consumption

Streetlight conversion

- 7,954 leased streetlights
- 4 year timeline starting fall 2014
- Estimated \$211,000 annual savings
- Estimated 871,659 kwh savings
- Area lighting in parks



What does 871,659 kwh represent?

- CO₂ emissions from the electricity use of **84.6 homes** in one year
- Annual ghg emissions of **128 passenger vehicles**
- CO₂ emissions of **68,946 gallons of gasoline consumed**
- CO₂ emissions of **8.1 tanker trucks' worth of gasoline**
- Carbon sequestered annually by **504 acres** of US forests

www.epa.gov



Vehicle Fuel

- 550 fleet vehicles with 17 hybrid vehicles
- Fuel Conservation Directive 2005, updated 2011
- Public Services began utilizing GPS technology
- Solid Waste Fleet update (18 vehicles)



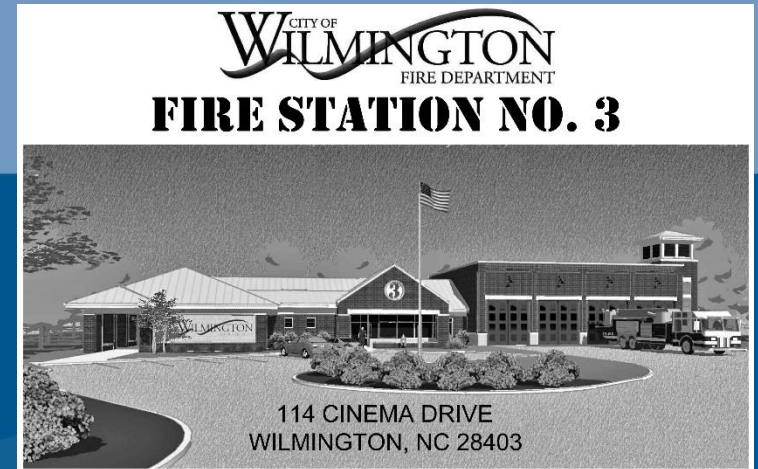
Vehicle Fuel

GPS on Public Services vehicles

- Public Services installed GPS on 89 vehicles Oct 2012
 - Stormwater, Solid Waste and Streets
 - Track speeding, idling times and physical location (geofence)
- Efficient customer service
- Estimated savings
 - Oct 2012-Sept 2013 compared to Oct 2013-Sept 2014
 - 113,029 miles
 - \$71,462 in fuel costs

Built Environment

- Cinema Drive Fire Station
 - Prospective LEED Silver
 - Solar thermal system
 - Native landscaping
 - Energy efficient lighting
 - Recycled and regional materials
 - Indoor air quality
 - Commissioning agent



Opportunities

- Environmental performance standards for city-owned buildings
- Manage building infrastructure through digital, centralized controls
- Energy disclosure reporting
- Fleet expanding GPS to full inventory
- Promoting alternative transportation choices
- Regional Material Recovery Facility (MRF)

Thank you!

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